IN THE CLAIMS:

1. (PREVIOUSLY PRESENTED) An intermediate network device for use in a computer network having a plurality of entities configured to issue requests to reserve network resources for use by traffic flows, the reservation requests specifying one or more flow parameters, the intermediate network device comprising:

a traffic scheduler having one or more network resources for use in forwarding network traffic received at the device at different rates;

a classification engine configured to identify network messages belonging to respective traffic flows based upon predefined criteria;

a resource reservation engine in communicating relationship with the traffic scheduler and the classification engine, the resource reservation engine including a flow analyzer that is configured to apply one or more sets of predefined heuristics that are accessible by the flow analyzer to the one or more flow parameters specified in the reservation requests to determine a type of traffic of the given traffic flow, the one or more sets of heuristics to determine the type of traffic independent of any marking values in packets of the given traffic flow that identify traffic type, and the flow analyzer further configured to select a queue and/or a queue servicing algorithm for assignment to the traffic flow corresponding to the reservation request.

2. (ORIGINAL) The intermediate network device of claim 1 wherein

the classification engine is directed to identify network messages belonging to the traffic flow, and

the traffic scheduler is directed to place network messages identified as belonging to the traffic flow in the selected queue.

3. (ORIGINAL) The intermediate network device of claim 1 wherein

the selected queue is one of a priority queue (PQ) and a reserved queue, and

the PQ is drained before any other queues.

4. (ORIGINAL) The intermediate network device of claim 3 wherein

a first set of heuristics is provided for determining whether the respective traffic flows carry real-time voice information, and

traffic flows that are determined to carry real-time voice information are assigned to the PQ.

5. (ORIGINAL) The intermediate network device of claim 4 wherein the flow parameters include one or more of an average data rate, a peak data rate and a token bucket rate.

6. (ORIGINAL) The intermediate network device of claim 4 wherein

the resource reservation engine utilizes the Resource reSerVation Protocol (RSVP) specification standard, and

the flow parameters are located in a RSVP Reservation (Resv) message received by the device.

7. (ORIGINAL) The intermediate network device of claim 6 wherein the flow parameters include one or more of a token bucket rate (r) value, a token bucket size (b) value and a peak data rate (p) value.

8. (ORIGINAL) The intermediate network device of claim 7 wherein a first set of predefined heuristics is given by the following equation:

$$(r \le r') \text{ AND } (b \le b') \text{ AND } \frac{p}{r} \le p\_to\_r'$$

where,

r' is a programmable token bucket rate constant, b' is a programmable token bucket size constant, and p_to_r' is a ratio of peak data rate to token bucket rate constant.

9. (ORIGINAL) The intermediate network device of claim 8 wherein r' is approximately 12288 bytes/second, b' is approximately 592 bytes/second and p_to_r' is approximately 110 percent.

10. (ORIGINAL) The intermediate network device of claim 4 wherein

a reserved queue is selected for each traffic flow that does not satisfy the first set of heuristics, and

a Weight Fair Queuing (WFQ) queue servicing algorithm is applied to the reserved queues.

11. (ORIGINAL) The intermediate network device of claim 2 wherein the flow analyzer, in response to the application of the one or more sets of heuristics, associates a selected Per-Hop Behavior (PHB) with the traffic flow corresponding to the reservation request.

12. (ORIGINAL) The intermediate network device of claim 1 wherein

the resource reservation engine utilizes the Resource reSerVation Protocol (RSVP) specification standard, and

the flow parameters are located in a RSVP Reservation (Resv) message received by the device.

13. (PREVIOUSLY PRESENTED) In a computer network having a plurality of entities interconnected by a plurality of intermediate network devices having one or more resources for use in forwarding network traffic flows, a method for assigning queues and/or queue servicing algorithms to the traffic flows, the method comprising the steps of:

receiving a reservation request message specifying one or more flow parameters for a given traffic flow;

applying one or more sets of heuristics to the flow parameters of the received reservation request message to determine a type of traffic of the given traffic flow, the one or more sets of heuristics to determine the type of traffic independent of any marking values in packets of the given traffic flow that identify traffic type; and

selecting a queue and/or a queue servicing algorithm for use with the given traffic flow based on the application of the one or more sets of heuristics.

14. (PREVIOUSLY PRESENTED) The method of claim 13 wherein a first set of heuristics is given by the following equation:

$$(r \le r') \text{ AND } (b \le b') \text{ AND } \frac{p}{r} \le p\_to\_r'$$

where,

r is a token bucket rate value,

r' is a programmable token bucket rate constant,

b is a token bucket size value,

b' is a programmable token bucket size constant,

p is a peak data rate, and

p_to_r' is a ratio of peak data rate to token bucket rate constant.

15. (ORIGINAL) The method of claim 14 wherein r' is approximately 12288 bytes/second, b' is approximately 592 bytes/second and p_to_r' is approximately 110 percent.

16. (ORIGINAL) The method of claim 13 wherein

a first set of heuristics is provided for determining whether the respective traffic flows carry real-time voice information, and

a given traffic flow that is determined to carry real-time voice information, based on the first set of heuristics, is assigned to a priority queue (PQ) that is drained before all other queues.

17. (PREVIOUSLY PRESENTED) The method of claim 13 wherein a traffic flow that is determined to carry other than real-time voice information is assigned to a selected reserved queue.

18. (ORIGINAL) The method of claim 17 further comprising the step of applying a Weight Fair Queuing (WFQ) queue servicing algorithm to the reserved queues.

19. (ORIGINAL) The method of claim 13 wherein the flow parameters include one or more of an average data rate, a peak data rate and a token bucket rate.

20. (ORIGINAL) The method of claim 13 wherein the reservation request message corresponds to a Reservation (Resv) message as provided in the Resource reSerVation Protocol (RSVP) specification standard.

21. (ORIGINAL) The method of claim 20 wherein the flow parameters include one or more of a token bucket rate (r) value, a token bucket size (b) value and a peak data rate (p) value.

22. (PREVIOUSLY PRESENTED) An intermediate network device for use in a computer network having a plurality of entities configured to issue requests to reserve network resources for use by traffic flows, the reservation requests specifying one or more flow parameters, the intermediate network device comprising:

means for receiving a reservation request message specifying one or more flow parameters for a given traffic flow;

means for applying one or more sets of heuristics to the flow parameters of the received reservation request message to determine a type of traffic of the given traffic flow, the one or more sets of heuristics to determine the type of traffic independent of any marking values in packets of the given traffic flow that identify traffic type; and

means for selecting a queue and/or a queue servicing algorithm for use with the given traffic flow based on the application of the one or more sets of heuristics.

23. (PREVIOUSLY PRESENTED) The intermediate network device of claim 22, further comprising:

means for providing a set of heuristics to determine whether the respective traffic flows carry real-time voice information, and

means for assigning a traffic flow that is determined to carry real-time voice information, based on the set of heuristics, to a priority queue (PQ) that is drained before all other queues.

24-31. (CANCELLED)

32. (PREVIOUSLY PRESENTED) The intermediate network device of claim 23 wherein the flow parameters are selected from the group consisting of: a token bucket rate for the given traffic flow; a token bucket size for the given traffic flow; and peak data rate for the given traffic flow.

33. (PREVIOUSLY PRESENTED) A method for assigning appropriate queues in an intermediate network device to traffic flows that pass through the intermediate network device, the method comprising the steps of:

receiving a reservation request message specifying one or more flow parameters that describe a given traffic flow;

comparing the one or more flow parameters to one or more constants stored in a memory of the intermediate network device; and

in response to the step of comparing, determining a type of traffic for the given traffic flow independent of any marking values in packets of the given traffic flow that identify traffic type;

directing the given traffic flow to a queue adapted for the determined type of traffic.

34. (PREVIOUSLY PRESENTED) The method of claim 33 wherein the determined type of traffic is real-time voice traffic and the queue adapted for the determined type of traffic is a priority queue (PQ) that is serviced with preference over other queues.

35. (PREVIOUSLY PRESENTED) The method of claim 33 wherein a first one of the one or more flow parameters is a token bucket rate and the step of comparing further comprises the step of:

comparing the token bucket rate of the given traffic flow with a programmed token bucket rate constant descriptive of a particular type of traffic.

36. (PREVIOUSLY PRESENTED) The method of claim 33 wherein a first one of the one or more flow parameters is a token bucket size and the step of comparing further comprises the step of:

comparing the token bucket size of the given traffic flow with a programmed token bucket size constant descriptive of a particular type of traffic.

37. (PREVIOUSLY PRESENTED) The method of claim 33 wherein a first one of the one or more flow parameters is a peak data rate and a second one of the one or more flow parameters is a token bucket rate and the step of comparing further comprises the step of:

comparing the ratio of the peak data rate to the token bucket rate with a programmed peak data rate to token bucket rate constant descriptive of a particular type of traffic.

38. (PREVIOUSLY PRESENTED) The method of claim 33 wherein the marking values are differentiated services codepoint (DSCP) values.

39. (PREVIOUSLY PRESENTED) The method of claim 33 further comprising the step of:

associating a selected Per Hop Behavior (PHB) with the given traffic flow in response to the step of comparing.

40. (PREVIOUSLY PRESENTED) An intermediate network device configured to assign appropriate queues to traffic flows that pass through the intermediate network device, the intermediate network device comprising:

a communication facility configured to receive a reservation request message specifying one or more flow parameters that describe a given traffic flow;

a flow analyzer configured to compare the one or more flow parameters to one or more constants stored in a memory of the intermediate network device and to determine a type of traffic for the given traffic flow independent of any marking values in packets of the given traffic flow that identify traffic type; and

a traffic scheduler configured to direct the given traffic flow to a queue adapted for the determined type of traffic.

41. (PREVIOUSLY PRESENTED) The intermediate network device of claim 40 wherein the determined type of traffic is real-time voice traffic and the queue adapted for the determined type of traffic is a priority queue (PQ) that is serviced with preference over other queues.

42. (PREVIOUSLY PRESENTED) The intermediate network device of claim 40 wherein a first one of the one or more flow parameters is a token bucket rate and the flow analyzer is further configured to compare the token bucket rate of the given traffic flow with a programmed token bucket rate constant descriptive of a particular type of traffic.

43. (PREVIOUSLY PRESENTED) The intermediate network device of claim 40 wherein a first one of the one or more flow parameters is a token bucket size and the flow analyzer is further configured to compare the token bucket size of the given traffic flow with a programmed token bucket size constant descriptive of a particular type of traffic.

44. (PREVIOUSLY PRESENTED) The intermediate network device of claim 40 wherein a first one of the one or more flow parameters is a peak data rate and a second one of the one or more flow parameters is a token bucket rate and the flow analyzer is further configured to compare the ratio of the peak data rate to the token bucket rate with a programmed peak data rate to token bucket rate constant descriptive of a particular type of traffic.

45. (PREVIOUSLY PRESENTED) The intermediate network device of claim 40 wherein the marking values are differentiated services codepoint (DSCP) values.

46. (PREVIOUSLY PRESENTED) The intermediate network device of claim 40 wherein the flow analyzer is further configured to associate a selected Per Hop Behavior (PHB) with the given traffic flow in response to the comparison.

47. (PREVIOUSLY PRESENTED) A computer-readable media containing executable program instructions for assigning appropriate queues in an intermediate network device to traffic flows that pass through the intermediate network device, the executable program instructions comprising program instructions configured to:

receive a reservation request message specifying one or more flow parameters that describe a given traffic flow;

compare the one or more flow parameters to one or more constants stored in a memory of the intermediate network device; and

determine, in response to the comparison, a type of traffic for the given traffic flow independent of any marking values in packets of the given traffic flow that identify traffic type;

direct the given traffic flow to a queue adapted for the determined type of traffic.

48. (NEW) The method of claim 33 wherein the one or more flow parameters include a token bucket rate, a token bucket size, and a peak data rate, and the step of comparing further comprises:

comparing the token bucket rate with a programmed token bucket rate constant descriptive of a particular type of traffic;

comparing the token bucket size with a programmed token bucket size constant descriptive of the particular type of traffic; and

comparing the ratio of the peak data rate to the token bucket rate with a programmed peak data rate to token bucket rate constant descriptive of the particular type of traffic.

49. (NEW) The intermediate network device of claim 40 wherein the one or more flow parameters include a token bucket rate, a token bucket size, and a peak data rate, and the flow analyzer is further configured to compare the token bucket rate with a programmed token bucket rate constant descriptive of a particular type of traffic, compare the token bucket size with a programmed token bucket size constant descriptive of the particular type of traffic, and compare the ratio of the peak data rate to the token bucket rate with a programmed peak data rate to token bucket rate constant descriptive of the particular type of traffic.